

PHARMACOLOGY CASE STUDY

EXAMPLE:

PEN PORTRAIT OF THE CHOSEN PATIENT

- Patient Health History:
- Patient profile and Biographical Data
- Chief complaints leading to admission
- Current health concern and illness
- Past medical history
- Family history
- Medication history

SECTION C

1) The Patient

- Choose an adult patient.
- List the drugs your patient is on (Frusemide, slow k, Digoxin, s/c Heparin) put the dosage and frequency of administration, how long your patient has been on these medications.
- Choose only two drugs out of the list. (Frusemide and Heparin)

2) The Medications

- Adult patient suffering from congestive cardiac failure. Confined to bed, occasionally sit on a comfortable chair. Legs elevated. Patient is very chesty, shortness of breath and bubbly breathing due to accumulation of fluid in the lungs; looking pale and cyanosed due to poor exchange of gases and hypoxia. Tachycardia, anxiety. Both legs are having pitting oedema.
- The frusemide drug is justified and suitable here as it is a diuretic inducing diuresis to remove excess fluid from the body, thereby improving exchange of gases and breathing.

- The patient is confined to bed. No muscle activity (pump); sluggish circulation. This provides an opportunity for blood to clot causing DVT and possibly pulmonary embolism. This justifies the giving of small dose of heparin subcutaneously to prevent such complications.

3) Show how the drugs work

➤ Frusemide

This is often prescribed in the treatment of heart failure because it has the ability to remove large amounts of excess fluids from the patient in a short period. It acts by preventing the reabsorption of sodium and chloride in the loop of Henle region of the nephron. (if possible, draw a diagram of the nephron and show the loop of Henle within the nephron)

➤ Heparin

This is naturally produced by the liver and lining of blood vessels. It prolongs coagulation time thereby preventing excessive clotting within blood vessels. Its action is immediate, but S/C heparin takes up to one hour to achieve therapeutic effect. Heparin inhibits the conversion of fibrinogen as well as prothrombin to thrombin. It prevents the enlargement of existing clots and formation of new ones. But it has no ability to dissolve existing clots.

4) Potential Side Effects

➤ Frusemide

- Involves electrolyte imbalance. Most important one is hypokalaemia which may cause dysrhythmias.
- Because of excessive fluid loss, dehydration and hypotension may happen.

- If combined with digoxin, patient must be carefully monitored. When given with lithium, elimination of lithium is decreased, causing a higher risk of toxicity. Frusemide may also be diminished the hypoglycaemic effects of insulin and sulfonylureas.

➤ Heparin

- Adverse effects
Abnormal bleeding may occur. Contra-indicated in patients with active internal bleeding. Oral anti-coagulants such as warfarin may potentiate the action of heparin. Drugs that inhibit platelet aggregation such as aspirin, indocid and brufen may induce bleeding. They should not be given same time as heparin. If there is serious bleeding, specific antagonist protamine sulfate may be administered intravenously (1mg for every 100 Units of Heparin) to neutralise heparins anti-coagulant activity.
- Potential Contributory Risk Factors
Look at the “pen portrait” of the patient. In the case of my patient with heart failure, he is to carry on with prescribed medication, monitor potassium level and restricted fluid intake, cut down on salt intake, may need oxygen.
Consider psychological care.

➤ Professional Issues

- Broader issues relating to the prescribed medication will be discussed here.
 - a) Achievement of concordance [Agreement or consistent/adherence (compliance)]. This is to do with the extent to which patients take their prescribed as prescribed by the doctor.

b) Related legal and professional aspects

- Mental Capacity (ability to comprehend, having sufficient understanding and profit from experience).
- Accountability (willingness to accept responsibility; acceptability).

c) Safety Netting (regular dosage, consistent, avoid double dose, avoid not taking medication even if feeling better, what to do before running out of medication)

- Review the prescribed medications.
- The full benefits of the prescribed medications will be achieved only if patients follow treatment regime.

d) Ethical Concerns

- Morally right and good.
- Following accepted rules of behaviour in relation to prescribed medication and instructions from doctors.
- Conforming to treatment regime.